

Nuclear Gauge Calibration and Testing Guidelines for Hawaii

Principal Investigator:

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Project Sponsor:

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Need:

AASHTO and ASTM nuclear gauge testing procedures can lead to misleading density and moisture readings for certain Hawaiian soils. Calibration curves need to be established for these unique materials, along with clear standard procedures to maximize the reliability of field measurements reported by contractors using the nuclear gauge.

Objective:

Provide calibration curves for high-moisture and other unique volcanic soils that may lead to erroneous gauge measurements without proper correction of raw instrument readings. Additionally, develop a set of written specifications for use of the nuclear gauge by contractors. These procedures will be incorporated into the Hawaii Test Method Manual. Training will also be provided on behalf of HDOT.

Duration:

3 years

Cost:

\$206,075

Update:

- Ongoing search of practices by other DOTs across the nation, along with a literature review on technical aspects of the nuclear technique, are in an advanced stage and will be completed in the near future.
- Survey of contractors has been initiated to evaluate difficulties with use of the nuclear gauge in Hawaii
- A nuclear gauge has been purchased and is ready for use
- Design of laboratory test chamber for calibration studies is nearly completed and will be sent out for fabrication shortly
- Soils to be tested have been identified and some have been collected from the field